

[STRUCTURE OF THIN-FILM TRANSISTOR AND METHOD AND EQUIPMENT FOR FABRICATING THE STRUCTURE]

Abstract

The invention is directed to method for fabricating a TFT. A semiconductor film is formed over a substrate. A semiconductor island is formed by patterning the semiconductor film. An insulating film is formed over the substrate. An optical annealing process is performed to crystallize the semiconductor island. A transistor is formed on the semiconductor island. Also, a patterning method on an amorphous semiconductor film uses a light beam to illuminate through a mask onto the amorphous semiconductor film, so as to crystallize a portion of the amorphous semiconductor film into a crystal semiconductor portion, or form an oxide on the amorphous semiconductor island in an oxygen ambience. Then, a gas etching process, such as H atoms, is performed to remove a portion of the amorphous semiconductor not being illuminated by the laser.